

Although four of the patients died, the author considers the results satisfactory.

While the diagnosis of peritonitis is usually easy, cases are occasionally met with which are very misleading. Instead of the constipation generally present, there may be diarrhoea; instead of a hard wiry pulse, it may be soft and dicrotic; distention and tenderness may be absent. The most reliable signs in the author's experience are the steadily increasing frequency of the pulse, often with a low or falling temperature, and the facial expression, this being either pinched and anxious or flushed, the latter usually being associated with delirium. In many cases the phenomena are those of septicæmia, which mask and obscure the symptoms immediately due to the inflammatory process in the peritoneum. These latter are pain, shock, paresis of the bowel, and a hard pulse, and are mainly produced through the impression made on the widespread sympathetic plexuses of the abdomen by the inflammation which envelops them. It is worth noticing that the umbilicus seems to be the point at which inflammatory collections naturally find their way out, if they are general.

ASEPTIC AND SEPTIC SURGICAL CASES WITH SPECIAL REFERENCE TO THE DISINFECTION OF SKIN, SPONGES, AND TOWELS.

LOCKWOOD has added another contribution to this subject (*British Medical Journal*, 1894, No. 1726). This paper is a continuation of two previous reports which appeared in the issues of the same journal of October 25, 1890, and May 28, 1892. The investigations have been conducted on the same line as laid down in those communications. The difficulty of rendering the skin sterile, as has been so often remarked upon, is emphasized by the present investigations. In a number of operations the skin was disinfected with the greatest care, after the most approved modern methods, including vigorous scrubbing with soap and warm water, followed by carbolic lotion 1:20, bichloride lotion 1:1000 and 1:500, solution of potassium permanganate and solution of oxalic acid; notwithstanding, small portions of skin dropped into culture-tubes invariably resulted in the growth of one or more of the various bacteria which infect the skin. Some of the operation wounds, however, ran a sterile course. The comparative inefficiency of corrosive sublimate and carbolic acid to inhibit bacterial growth was demonstrated by mixing solutions of these chemicals, in different proportions, with broth cultures, and it was found that inoculated colonies continued to grow in these media. The failure of watery solutions to penetrate the pores of the skin has been recognized for some time, and an effort made to overcome this defect in the technique by employing alcohol, ether, or benzine. In view of this fact the author was induced to employ glycerin as the vehicle for applying the chemical antiseptic. Accordingly bichloride in glycerin 1:2000, and carbolic acid in glycerin 1:40, were applied after the usual preparation of the skin, twenty-four hours before operation. This plan was more successful. In about half of the cases test-tubes inoculated with fragments of skin so prepared remained sterile. Inasmuch as biniodide of mercury is not precipitated by albumin, it was thought that this substance might yield more satisfactory results. Of two trials, however, the skin was found by culture-

experiments to have been aseptic in one and to contain staphylococcus albus in the other.

Of 21 experiments upon the disinfection of the skin which have been carefully detailed, 7 were successful—in 6 the wounds healed by first intention, without either local or constitutional reaction. In 14 of the cases the skin was septic—9 of these healed by first intention and 5 suppurated. In none of these, however, was the suppuration severe or prolonged.

In regard to disinfection of the hands, the author states, the best results have followed the usual thorough scrubbing with soap, hot water, and nail-brush, cleansing the nails and then immersing for one minute in a 1:1000 solution of sublimate in alcohol.

The observation on the disinfection of towels is interesting: Three of four towels which had been soaked for two hours in 1:20 carbolic solution were found to contain staphylococcus pyogenes albus. In another case a towel which had been kept in carbolic solution 1:25 for twenty hours grew a bacillus. In another case a towel which had been immersed for twenty-four hours in a solution of the same material was sterile. The result of the use of bichloride was also not uniform. Of 6 experiments in sterilizing towels by the steam sterilizer for a half-hour, 5 were successful and 1 failed. The latter was attributed to the towel having been tightly folded during the sterilizing process. By taking the precaution of placing the towel loosely in the sterilizer, the author believes this method may be relied upon; the towels being kept, of course, in antiseptic solutions after being taken from the sterilizer.

The sponges were prepared as follows: If new they were well shaken, then soaked in a solution of hydrochloric acid (1 drachm to a pint) for twenty-four hours. Next they were thoroughly washed and squeezed out in water at the temperature of 100° F.; and then immersed in a cold solution of sulphurous acid (1:5) for twelve hours, being kept below the surface of the water. Lastly they are squeezed as dry as possible and placed in carbolic solution 1:20, ready for operation. Of 12 experiments with sponges so treated, 11 were found to be sterile, the failure having occurred when the process was carried out by an inexperienced person. As carbolic acid evaporates rapidly, the jars containing the sponges must be tightly stoppered. These experiments show that asepsis is with the greatest difficulty obtained by the use of chemicals, but once secured, either by this means or by heat, dilute solutions of chemicals suffice for its continuance.

OPERATIVE INTERVENTION IN ANURIA OF CALCULOUS ORIGIN.

DEMONS and POUSSON have collected (*Annales des Maladies des Organes Génito urinaires*, 1894, No. 2) from literature, fifteen cases of calculous anuria which were subjected to operation, to which they add three cases personally observed. Of the eighteen cases, six died—a mortality of 33½ per cent. This compares very favorably with those treated expectantly. Leguen places the mortality at 71.5 per cent. in cases treated without operation.

The authors conclude that calculous anuria indicates operation as urgently as does intestinal obstruction. The calculus must not be attacked, however, from in front. The uncertainty regarding the exact location of the obstruc-